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## Preparing Instructional Designers for Different Career Environments: A Case Study

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**Abstract** The competency requirements, content, culture, and value systems of business and industry career environments can differ significantly from that of the higher education context where instructional design and technology (IDT) students receive their formal training. Therefore, faculty should consider how they might provide flexibility in their programs to allow IDT students to experience the contexts in which they choose to work following graduation. The article reports on the results of a case study of an exemplary IDT program identified through a national survey. The emphases and preparation practices of faculty in the case study program were noted to provide an example of how one program successfully prepares its graduates for a variety of career environments, and specifically for a business and industry environment. By studying the successes and challenges of specific programs, new or existing programs may gain ideas for building or re-working existing programs to better meet the needs of students desiring contextualized preparation for different career environments.

**Keywords** Instructional design and technology preparation · Instructional design competencies · Preparing instructional designers · Instructional design · Instructional technology

An analysis of the instructional design literature indicates that there are differing competency requirements for instructional design and technology

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(IDT) practitioners working in different career environments, with the largest variation occurring in business and industry environments (AECT, 2000; Andrews, Moses, & Duke, 2002; Branch, Moore, & Sherman, 1988; Byun, 2000; Paetsch, 1991; Richey, Fields, & Foxon, 2001; Surrey & Robinson, 2001). In addition, the competencies, culture and value systems, and context of many business and industry work settings differ significantly from that of higher education where IDT students receive their formal training (Tasker & Packham, 1993).

### **Of competencies and cultures**

With regard to IDT competency requirements, studies of job announcements have shown that there are differences in the requirements listed for business and industry versus higher education jobs (Byun, 2000; Moallem, 1995). For example, IDT job advertisements for business and industry generally list as highly desirable, skills that demonstrate a knowledge of Human Performance Technology (HPT) (see Table 1). In contrast, HPT skills such as gap analysis and cost-benefit analysis are not common in job advertisements for higher education positions (Greer, 1992; Reiser, 2002; Reiser & Dempsey, 2002; Rossett, 2002).

In addition to differences in competency requirements, IDT positions in different career environments or sectors often differ vastly with respect to organizational culture. The term "culture" refers to the shared beliefs and values, behavioral norms, and communication patterns that are reflected in an organization's policies and actions (King, 1998; Powell, 1997; Tessmer & Richey, 1997). An organization's culture and what is valued in that culture impacts the design of instruction, and researchers caution that IDT graduates should consider potential differences in culture both in their job selection and their instructional designs (Bartell, 2001; Cabral-Cardoso, 2001; Tasker & Packham, 1993; Thomas, Mitchell, & Joseph, 2002; Trimby, 1982).

### **The need for contextualized instruction**

Tessmer and Richey (1997) define context as the "whole situation, background or environment that is relevant to a particular event" (p. 87), and they emphasize that contextualizing instruction to the future work environment "makes abstract concepts more concrete, promotes understanding and retention, as well as facilitates reinforcement and transfer of training" (p. 90). In a study designed to explore the relationship between academic preparation and professional ID practice in business and industry, Julian (2001) stated that "because the field of ID has become so rich and varied in terms of settings in which it is practiced, we can no longer discuss the profession without consideration of the environment of practice" (p. 16). The challenge for preparation programs, then, is to provide a flexible program of study that provides opportunities for students to experience the work cultures and contexts of

**Table 1** Unique or emphasized skills & competency areas for business & industry career environments<sup>a</sup>

Area of competency	Specific skills
Basic competencies	<ul style="list-style-type: none"> <li>• Ability to think, write, and communicate orally</li> <li>• Ability to make wise and wide use of instructional design and technologies</li> </ul>
Communication competence	<ul style="list-style-type: none"> <li>• Writing and technical writing</li> <li>• Public speaking and presentation skills</li> <li>• Ability to justify and communicate a sound business case for training solutions</li> </ul>
Interpersonal relationship competence	<ul style="list-style-type: none"> <li>• Motivation</li> <li>• Coaching</li> <li>• Persuasion</li> <li>• Leadership</li> <li>• Negotiation</li> <li>• Team skills</li> <li>• Cross-cultural awareness</li> </ul>
Analytic competence	<ul style="list-style-type: none"> <li>• Critical thinking</li> <li>• Problem definition and problem solving</li> <li>• Performance gap analysis</li> <li>• Strategy and intervention application</li> <li>• Business research skills</li> </ul>
Project management competence	<ul style="list-style-type: none"> <li>• Project/resource management (budgeting, cost estimating, scheduling)</li> <li>• Contracting and outsourcing skills</li> <li>• Customer-oriented outlook</li> </ul>
Business competence	<ul style="list-style-type: none"> <li>• Systems thinking</li> <li>• Organizational and industry knowledge</li> <li>• Change management and coping</li> <li>• Global solutions</li> <li>• Cost-benefit analysis and return on investment calculation skills</li> <li>• Knowledge of business trends such as performance improvement and emotional intelligence</li> </ul>
Technology literacy & competence	<ul style="list-style-type: none"> <li>• Knowledge of recent technologies</li> <li>• Evaluation of new and existing technologies</li> <li>• Online teaching/designing and distance education skills</li> </ul>

<sup>a</sup> From Alluisi, 1991; Andrews, Moses, & Duke, 2002; AECT/NCATE, 2000; Bassi, Benson & Cheney, 1996; Berge, et al., 2002; Carlidge, Gerity, & Eastmond, 1999; Furst-Bowe, 1996; Liang, 1999; Moallem, 1995; Morlan & Lu, 1993; Paetsch, 1991; Piskurich & Sanders, 1998; Reiser & Dempsey, 2002; Richey, et al., 2001; Rossett, 1990; Rossett, 2000; Ruckdeschel, Yarter, Riveccio, Cortes, & Cookson, 1998; Salopek, 1998; Spector & dela Teja, 2001; Surrey & Robinson, 2001; Valkeavaara, 1998)

their choice. Due to the differences noted above, such experiences are particularly critical for those seeking a successful practice in business and industry environments.

Are there “best practices” in IDT preparation that provide flexibility and contextual experiences that highlight differences in practice from one career environment to the next, or from public to private sectors? The literature is

full of suggestions for contextualizing instruction, from the use of case studies and internships to cognitive apprenticeships and role play (Bannan-Ritland, 2001; Cennamo & Holmes, 2001; Julian, 2001; Quinn, 1994, 1995; Rowland, Parra, & Basnet, 1994). Do successful programs use these suggested methods and practices? Just how do exemplary IDT programs prepare students for practice in different career environments? While there are two fairly recent case studies of IDT practitioners and their preparation for professional practice (Atchison, 1996; Julian, 2001), there are no case studies that examine specific IDT programs in the literature. Results of a national survey of IDT practitioners, the *Instructional Design Career Environments Survey*, identified exemplary programs for preparing graduates to work in a variety of career environments (Larson, 2005). A case study of one of the top three programs ranked as exemplary by survey respondents was carried out in the spring of 2004, providing details on the practices of the faculty within that program. [In accordance with qualitative methodologies, pseudonyms are used to report the outcomes of this study to protect the identity of the school and the study participants, as well as to focus attention specifically on the research outcomes].

## Methodology

A mixed method approach was taken to investigate exemplary preparation practices, using both a practitioner survey and a case study (Creswell, 2003). A brief description of the survey that preceded this case study is provided (for further detail on the survey, see Larson, 2005).

### A survey of preparation and practice

The 2004 *Instructional Design Career Environments Survey* consisted of both an online and mail version developed to ascertain the match between preparation and practice as experienced by current practitioners, specifically with regards to preparation for different career environments (e.g., business and industry, higher education, k-12, health industry, and government/military). The survey was advertised through three professional organizations whose memberships were known to include instructional design and technology professionals: The Association for Educational Communications and Technology (AECT), the International Society for Performance Improvement (ISPI), and the American Society for Training and Development (ASTD). The mail version of the survey was sent to a systematically-selected sample of 254 practitioners from AECT. The mail survey resulted in a 32.0% response rate. A response rate for the web survey could not be calculated, since there is no way to determine the population made aware of a web-based survey. After data analysis indicated that mail and online respondents had similar demographics, the mail and online responses were combined for data analysis (Larson, 2005).

Results indicated that the majority of respondents attended a generalist program designed to prepare them for a variety of career environments, as opposed to a program designed to prepare them for a specific environment, such as business and industry or higher education. In addition, the survey asked questions on preparation with respect to design practices and aspects of workplace culture (i.e., values, beliefs, attitudes and assumptions). Respondents were asked to rate their own IDT programs and to list up to three programs that they knew to be exemplary for preparing IDT professionals for practice in their career environment, either from direct experience, working with a graduate of that program, reading about the program, or overall program reputation. The top three universities received a much larger percentage of the total votes, even when the responses of graduates of those universities were removed. Interestingly, the same top three universities were identified in a 2000 informal poll of ITFORUM participants, a listserv hosted by University of Georgia—Athens (results available at <http://itech1.coe.uga.edu/itforum/polls/poll1.html>). It should also be noted that the authors of this article and the researcher for both the survey and case study are not students, graduates or employees of any of the top three universities (Larson, 2005).

### A case of instructional designer preparation

The case study method was selected to provide an in-depth picture of the preparation practices of faculty at a successful IDT program, and because, according to Yin (1994), a case study design is particularly well suited to situations in which it is impossible to separate the variables from their context. “Successful” is defined here as a reputation for excellence among practitioners, as measured through the *Instructional Design Career Environments Survey*. The Instructional Systems (IS) program at Lovgren University (LU) (pseudonym) was one of the top three exemplary programs identified by the survey, and was selected as the subject of the case study due to its rating by respondents for excellence in preparing its masters students for careers in the business and industry sector. This rating is notable, since the literature indicates that the greatest variation in competency requirements and IDT practices occur in business and industry career environments, thus posing a particular challenge for programs attempting to prepare their graduates for success in corporate America (Berge, et al., 2002; Liang, 1999; Piskurich & Sanders, 1998; Reiser & Dempsey, 2002; Richey, et al., 2001). The LU IS program is also designed to prepare its doctoral students for a higher education career environment; therefore, the researcher was interested to see how the program design provided flexibility to allow students to experience the work contexts of their choice.

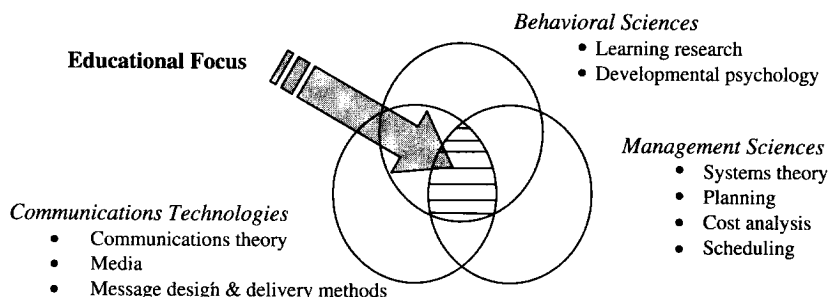
### Case study context

Lovgren University (LU) has a long-standing history of preparing instructional systems professionals at the graduate level. A review of the IS program

organization, its history, and the study participants establishes a context for this case study. The IS program is currently part of a traditional educational psychology department, although the program's strong empirical focus is reflected in the fact that it was originally part of an educational research department. The scope and direction of the IS program are based on the vision of its original faculty, who designed and implemented the program in the late 1960s to answer the need for a *science* of education. The courses offered and the organization of the department reflect their vision of a merger of management science, behavioral science, and communications technology, with an emphasis on instructional systems (see Fig. 1).

The IS program is closely affiliated with the university's Learning Technologies Institute (LTI), a center that focuses on research and development projects related to instructional design, distance learning, and evaluation. Teams of IS graduate students led by a faculty member work on projects, applying empirical research to the practical solution of problems in education and training for national and international entities outside the university. LTI project work provides students with valuable authentic and relevant experiences in the form of internship and assistantship opportunities. An on-campus entity, the Distance Learning Office (DLO) provides IS students with similar opportunities working on distance projects for the entire university community.

The IS program offers degrees at the masters, specialist, and doctoral levels, as well as optional certificate programs in Human Performance Technology, Online Instructional Development, and Program Evaluation. The program's faculty agree that their doctoral degree adopts more of a "generalist" approach, preparing students for a variety of career environments, building upon practitioner skills and emphasizing research and management skills. In contrast, however, the design of the masters program reflects the fact that, as one LU senior faculty member put it, most masters students "go into business and industry so a lot of the courses that we offer are...targeted towards preparing them for business and industry." The masters program (the emphasis of this case study) is designed to give students a solid foundation in instructional systems and performance improvement, and also has several areas of specialization. As for placement, the vast majority of LU IS masters graduates



**Fig. 1** Instructional systems: Convergence of management, communications, and behavioral sciences

end up in business and industry settings, which aligns with the program's emphasis on preparation for that environment.

### *Research questions, participants and data collection*

The following research questions were investigated to determine how this program handled the need for flexibility in preparing IDT graduates for corporate career environments:

1. What are the preparation approaches of IDT faculty in an exemplary program concerning IDT professional preparation for different career environments and the cultural aspects of those environments?
2. How does an exemplary IDT preparation program instantiate the preparation approaches of its faculty?

In the course of this case study, the researcher conducted 17 faculty interviews, five (5) interviews of alumni employed in business and industry, two (2) current student interviews, and one student focus group session with 11 participants. The focus group considered questions regarding their experiences and the alignment of those experiences with results from the *Instructional Design Career Environments Survey*. All interviews were recorded and transcribed.

### **Data Analysis**

The credibility and confirmability of the findings were established through triangulation of data sources. Results of the 17 IS faculty interviews were analyzed using confirmatory coding and triangulated with student and alumni interviews, the student focus group session, and program documents. Member checks were also used to establish credibility and to obtain further illumination (Creswell, 1998, 2003; Stake, 1995). Separate protocols were developed and pilot tested for the faculty interviews, the student interviews, and the alumni interviews. The protocols featured a semi-structured design to encourage the discovery of information not anticipated by the researcher (Creswell, 1998; Merriam, 2001). Data from all interviews were analyzed using confirmatory codes taken from the two research study questions. Common themes were identified, the results analyzed, and faculty preparation approaches and practices were extracted from the data. The documents collected during the case study were also triangulated with the interview data to further ensure the trustworthiness of the findings. Finally, results were compared to the data gleaned from the initial survey to identify the match between the program at LU and the impressions of alumni practitioners.

### **Limitations**

This study highlights the practices of faculty preparing masters students for a career in a business and industry environment in a specific locale and time frame.

As a single case, it is acknowledged that the results are less generalizable than those from multiple cases (Benbasat, et al., 1987; Yin, 1994). Programs in other locations that prepare IDT graduates for other career environments may emphasize different approaches or practices. This case study therefore represents a successful implementation of an IDT program, and does not purport to be “the best” or only method for preparing students for IDT.

## Results and discussion

The coding and data analysis identified six common preparation approaches expressed by the IS faculty. These approaches and corresponding practices align with key features of many IDT graduate programs across the country (Bludnicki, 2001), and with suggestions found in the IDT preparation literature (Ertmer & Cennamo, 1995; Julian, 2001; Quinn, 1995; Rowland, et al., 1994; Tripp, 1994). As found by Larson (2005), feedback from a national audience of IDT professionals indicated the strength of the LU program to be both the quality of general IDT preparation, as well as preparation for a business and industry work environment and culture. The six approaches identified by faculty included:

1. A pragmatic approach;
2. A systematic, systemic, and empirical approach to both content and methods;
3. An approach that emphasizes change agency;
4. A self-evaluative approach that works toward continuous improvement in both personal practice and program implementation;
5. An approach that incorporates authentic, relevant, real-world experiences; and
6. A collaborative approach that fosters professional development and an atmosphere of collegiality through mentoring opportunities for faculty and students.

Many of the preparation approaches expressed reflect those of the original program's founding faculty even though current faculty comments indicated that the approaches were based on their own experiences or on employer feedback. Those interviewed shared many critical incidents or ‘war stories’ that had helped shape their preparation practices. The comments of both current and founding faculty concerning their preparation approaches are included in this case study to provide the data necessary to understand the phenomena of IDT preparation.

The six preparation approaches reflected in faculty comments are listed in Table 2. The table provides a summary of how each approach is instantiated in the LU IS program.

**Table 2** Instantiation of Lovgren University's IST educator preparation approaches

Approaches to IDT preparation	Instantiation of preparation approaches
A pragmatic approach—use what works	<ul style="list-style-type: none"> <li>• Use of alumni &amp; guest speakers in classes and in the Spring Seminar</li> <li>• Experiential exercises</li> <li>• Team collaboration &amp; shared experiences</li> <li>• Reflective debriefing sessions following client interactions to build shared mental models</li> <li>• Faculty “war stories” from a variety of career environments</li> <li>• Case studies</li> <li>• Incorporation of practice and feedback, an abundance of diverse examples, project-centered course design, and the modeling of a variety of instructional strategies</li> </ul>
A systematic, systemic, empirical approach	<ul style="list-style-type: none"> <li>• Involving students in analysis and measurement of class processes</li> <li>• Involving students in vital research on teams</li> <li>• Well-designed courses &amp; a “practice what you preach” attitude on the part of faculty</li> <li>• Holistic view of the program &amp; students’ future occupation in terms of the value-added provided to society as a whole</li> <li>• Competency-based masters program</li> </ul>
An approach emphasizing change agency	<ul style="list-style-type: none"> <li>• Change management course</li> <li>• Project management course that teaches the importance of negotiating skills</li> <li>• Emphasis on the “value-added” provided by skilled IS graduates both for the immediate educational problem &amp; to future society</li> </ul>
Self-evaluative approach aimed at continuous improvement	<ul style="list-style-type: none"> <li>• Regular reflection on the part of faculty, both individually &amp; in groups, to analyze what worked &amp; what didn't work</li> <li>• Regular evaluations by the university, students, past alumni, &amp; outside IDT experts</li> <li>• Regular program revisions based on the results of evaluations</li> </ul>
An approach that incorporates authentic, relevant, & real-world experiences	<ul style="list-style-type: none"> <li>• Courses incorporate authentic projects making use of on- and off-campus clients &amp; authentic educational &amp; performance problems</li> <li>• Masters program requirement to complete an internship</li> <li>• On- &amp; off-campus opportunities for assistantships &amp; internships</li> <li>• Participation in research communities of practice throughout the student's program of study</li> <li>• Incorporation of authentic experiences to address the workplace cultural issues addressed in the study</li> </ul>
A collaborative approach featuring mentoring opportunities for faculty & students	<ul style="list-style-type: none"> <li>• A tradition of mentoring both at the faculty-to-faculty and faculty-to-student level</li> <li>• Local, national, and international collaborative opportunities for faculty, students, and outside researchers</li> <li>• An annual LTI symposium that highlights global collaboration</li> </ul>

## Pragmatic approach

The pragmatic approach to preparation of using “what works best” was a common theme expressed by many of the faculty. This pragmatism dates back to the founding faculty, as one retired faculty member explained, “we all had been in business and industry, [and]... all shared an interest in very practical applied applications. We were not a bunch of theoreticians who wanted to [merely]... think great thoughts. We wanted to... make a difference.” Such remarks were echoed by current faculty: “I have a very pragmatic perspective both in terms of... ‘let’s use what works’, but also in the sense of integrating a variety of [theoretical] positions... to take some of the best of all of it.”

Faculty operationalize “what works” through a curriculum that, like many other IDT programs, emphasizes those aspects of instructional design applicable to many different career environments. Attention is given to developing the core skill areas of analysis, design, development, implementation, evaluation and research, management, and communication, as reflected in a list of 36 competencies that LU masters students must develop during their studies (see Table 3). In addition to IDT basics, these competencies reflect skills unique to business and industry environments. The list of competencies was developed by identifying potential employers for LU graduates and investigating the competencies required by those employers. The competency list is given to masters students at the beginning of their program, and over the course of their time at LU, they are required to create a print-based or electronic portfolio of instructional products that illustrates their development of each competency. Use of this type of capstone project enables the alignment of program objectives, faculty expectations, learner outcomes and assessment, and culminates in a faculty review of the portfolios and a personal reflection by students on their progress toward developing the competencies. Interviews with alumni employed in business and industry confirmed that the competencies were directly applicable to their job requirements.

In addition, the LU masters competencies track closely with the empirically-based instructional design competencies established by the International Board of Standards for Training, Performance and Instruction (IBSTPI) (Richey, et al., 2001, p. 141). The IBSTPI competencies are among the most widely-researched and validated instructional design competencies available, and, as reflected in the IBSTPI competency assumptions, emphasize “issues and processes more unique to a business environment than those of elementary or secondary education, or of higher education or community-based education” (Richey, et al., 2001, p. 37).

As for methods, faculty indicated that they use experiential exercises to make theories come alive; diverse examples to discourage the tendency of novices to think there is just ‘one right way’ to approach a learning problem; and case studies to sensitize students to the differences they could encounter in various career environments. Collectively, there is a wide range of career environment experience represented in the teaching staff that enables them to produce many of these case studies from personal experience. When personal

**Table 3** Lovgren University's Masters program competencies and their parallel with competencies required in business & industry

Categories	Competencies <sup>a</sup>	Area of competence for B&I Environments
Analysis	<ol style="list-style-type: none"> <li>1. Designs needs assessment plan or proposal <i>by applying knowledge of distance learning field</i></li> <li>2. Identifies gaps between actual &amp; desired performance</li> <li>3. Identifies appropriate data-gathering techniques to gain insight into cause of gaps in performance</li> <li>4. Proposes solutions that are appropriate to closing an identified performance gap</li> <li>5. Conducts learner analysis prior to designing training</li> <li>6. Determines the knowledge, skills &amp; attitudes required to master a specific job, task or role</li> <li>7. Determines required resources &amp; constraints for a solution or solution system</li> <li>8. Identifies relationships of systems &amp; subsystems within an organization</li> <li>9. Determines learner's entry skills, prerequisite knowledge &amp; aptitudes</li> </ol>	<p>Basic, analytic, &amp; technology competence</p> <p>Analytic competence</p> <p>Analytic competence</p> <p>Analytic, communication, &amp; business competence</p> <p>Basic &amp; analytic competence</p> <p>Basic &amp; analytic competence</p>
Design	<ol style="list-style-type: none"> <li>10. Prepares an instructional analysis for given learning outcomes</li> <li>11. Prepares a learning &amp; performance context analysis for a given learning outcome</li> <li>12. Prepares clear statements of objectives (in performance terms with conditions &amp; acceptable performance criteria stated) for various categories of learning outcomes</li> <li>13. Applies rules &amp; principles of learning to the design of instructional materials &amp; the design of group activities in a distance learning environment</li> <li>14. Applies instructional design strategies intended to account for individual differences among learners</li> <li>15. Specifies appropriate instructional strategies for various categories of learning outcomes</li> </ol>	<p>Project management &amp; business competence</p> <p>Business competence</p> <p>Basic competence</p> <p>Basic &amp; analytic competence</p> <p>Basic &amp; analytic competence</p> <p>Basic &amp; communication competence</p> <p>Technology competence</p> <p>Basic competence</p> <p>Basic competence</p>
Implementing Media & Technology	<ol style="list-style-type: none"> <li>16. Selects media for given instructional objectives with a rationale for the selection</li> <li>17. Develops instructional material using a variety of different media</li> </ol>	<p>Basic &amp; technology competence</p> <p>Basic &amp; technology competence</p>

Table 3 continued

Categories	Competencies <sup>a</sup>	Area of competence for B&I Environments
	18. Utilizes instructional media & equipment effectively in presentations & settings that demonstrate proper utilization & appropriate showmanship techniques 19. <i>Utilizes electronic communication technologies effectively to support learning through instructor-student &amp; student-student interaction using appropriate techniques</i> 20. Applies skills in using computer software for professional use.	Communication, interpersonal & project management competence Basic & technology competence  Technology Competence Analytic & business competence Basic & analytic competence Basic & business competence  Basic competence Project management competence Project management competence Project management & interpersonal competence Project management & business competence Business competence Basic & communication competence Communication & interpersonal competence Interpersonal competence Basic, communication & interpersonal competence Communication & interpersonal competence Interpersonal competence Interpersonal competence
Evaluation & Research	21. Assess & synthesizes data from a variety of sources & draws logical conclusions from available information (excluding formative evaluation) 22. Conducts formative evaluations of products. 23. Designs & implements appropriate assessments of human performance & organizational results 24. Designs & implements appropriate assessments of human learning	
Management	25. Develops a long-range project plan 26. Prepares a project budget 27. Coordinates the design team by delegating responsibilities to specific personnel 28. Identifies requirements for project-related information systems	
Communication	29. Demonstrates principles & techniques that are used in change management 30. Communicates effectively in professional writing 31. Communicates effectively in instructional materials & other forms of instruction 32. Works effectively with other team members 33. Communicates effectively orally 34. Uses effective interpersonal communication techniques 35. Develops a professional network 36. Demonstrates understanding of a professional code of ethics	

<sup>a</sup> Note that the italicized text are competencies specific to those going into a distance learning environment

experience or knowledge is not enough, instructors bring in guest speakers to expose students to multiple and diverse perspectives. In fact, program funds are set aside to bring in speakers from various career environments for the Spring Seminar Course that is highly regarded by faculty, students, and alumni participants.

### Systematic, systemic and empirical approach

LU faculty agree that a systematic, systemic (holistic), and empirical approach is best for most tasks involved in human performance improvement and instructional design. Faculty emphasized that they try to “be the example” for students by using a *systematic* approach to the design of their own courses as well as the overall design of the IS program (see Table 3). One alumnus recalls being “turned on” to the field by the instructor of one of his first classes:

Talk about a frigging phenomenal instructional design, oh my gosh. That guy is the best instructional designer I have ever seen. I remember going through a three hour class and it seemed like 30 minutes. It was so well put together... He really ...walks the walk, big time!

At the program level, a systematic effort was undertaken during the late 1990s to ensure that IDT students would be marketable upon graduation. Faculty first identified potential employers for their graduates and then determined the competencies required by those employers. The result was the list of competencies mentioned previously (Table 3), which provides students with both a guide for the program as well as a guide for future professional development following graduation. (Note that Table 2 includes a column that relates each of the LU masters competencies to the business and industry competency areas listed in Table 1.)

The approach of LU IS faculty is also *systemic* in that many stressed that they look holistically at the student's overall experience in the program and seek to extend their plans for professional development beyond their academic preparation program (Table 3, competencies 25, 27, and 35). One faculty member commented on his efforts to immerse students in both systems and systemic thinking, to “get the students acquainted with the notion they have to see the system and they have to see the systemic problem, and the causes and solutions for that too.” Employer interviews are also used to operationalize *systemic* instruction by taking steps to understand the program's role in relation to the larger world of work and society.

Finally, a retired faculty member emphasizes the shared belief that credibility in the larger world is dependent on the ability to demonstrate that IDT practice is informed by *empirical* research (Table 3, competencies 3 and 21): “if I had to choose one word that described or that really characterized our work at LU, it's ‘empirical.’” Through the partnership with LTI, faculty involve students in their *empirical* research, using a project development team approach to make course and method evaluations transparent and to provide students with a better understanding of the research process.

### An approach emphasizing change agency

The IS faculty share the belief that systematic and empirically-based instructional processes and products can make a positive impact on individuals and societies. They see positive change agency for the purpose of improving education as the “value-added” that IS program graduates bring to all career environments: “one of the things that we try to build into all our courses is to make our graduates change agents,” and “that kind of thing is very helpful regardless of where a human goes.” Knowledge of change agency was identified as desirable through employer interviews and it is featured as one of the 36 competencies for the masters program (Table 3, competency 29). As one student put it, “I think that maybe the strength of LU students is that they are effective change agents in any context... educators are change agents.” The development of change management skills is deemed important enough to be the topic of an entire course at LU, and students are encouraged to take either the IS change management course or a similar one offered through the LU College of Business.

### Self-evaluative approach aimed at continuous improvement

LU faculty also share a commitment to self-evaluation. As one senior faculty member put it, “We have tried not to remain complacent—we believe in revision and continual improvement.” During interviews, faculty frequently expressed a desire to add value to the program, and many emphasized the importance of modeling self-evaluation for their students through their own professional practice. One student commented, “They are taking strides to address market trends and market demands... integrating initiatives or course redesigns or additional opportunities to help in continuous improvement on their own practices in order to situate their students appropriately for [the opportunities].”

To that end, the faculty use formal evaluations conducted by students, other university entities, and outside consultants on a regular basis to assess and improve the IS program. With respect to faculty attempts to model good practice, a current LU student credited faculty efforts to ‘practice what they preach,’ saying:

The modeling of teaching and instruction is excellent. It’s dynamic; it reflects the content that we’re learning so you don’t go home and have that paradoxical knot in your stomach where you’re reading one thing but you’re doing something else [in class].

That continuous improvement is a basic value in the program is illustrated by the fact that students and alumni feel free to express their opinions on areas needing improvement. Areas for improvement identified by alumni employed in business and industry included instruction in basic finance, technology skills, evaluation, and marketing, specifically, marketing the value of ID. Current student suggestions for improvement included the addition of

teaching and grant-writing experience, and doctoral students who had obtained their masters degrees in other programs noted that a competency list similar to that provided to the masters students would help guide them in their own program of study.

### An approach incorporating authentic, relevant, real-world experiences

Faculty frequently stressed that authentic, relevant, and real-world experiences are the best means of preparing students for a variety of career environments. To this end, case studies and project-based research have long been essential ingredients in the IS program. Many of the case studies are taken from the consulting experiences of LU faculty, and an entire course is dedicated to looking at cases in instructional systems. In addition, authentic learning experiences are incorporated into courses through real world projects that feature the type of ill-defined problems common in IDT practice. Local businesses provide projects that match student teams with actual clients to solve real educational or performance problems. The program's ID project management course and a special course on performance systems analysis both require students to work collaboratively with either a university or local community client to solve an instructional problem. As one student put it: "It's a real life consulting project. You work with an external client, you negotiate, you... [consult], do the analysis, provide the report and give presentations. It's an intensive project that spans the entire semester."

The faculty pursue their own authentic experiences through consulting and sabbaticals that enable them to become familiar with IDT practice in a variety of work environments and to keep up with the latest trends in the field. As one of the original faculty members put it, "if you work in a professional school... you need to maintain a private practice... in so doing, I am able to involve students in my practice to get a different perspective on what goes on [in the real world]." Faculty use these experiences to improve the program. For example, in the early 1990s, the private sector sabbatical and consulting experiences of several LU faculty prompted them to incorporate a Human Performance Technology (HPT) course in the program. Today, HPT is a basic theme in the masters program and has been incorporated into all the courses.

Real-world practice is also gained through supplemental learning experiences outside the coursework, such as internships and assistantships at both on- and off-campus locations. In fact, both on-campus and online masters candidates are *required* to complete an internship. Alumni of the program frequently provide students with off-campus internships at local businesses and across the country. On-campus experiences are usually fulfilled at LTI or DLO, where research centers set up by individual faculty provide a base and grant funds for projects with businesses, international organizations, and branches of the military. These projects employ graduate students who work alongside faculty on research teams, enabling them to participate in an authentic community of practice and to benefit from the modeling of faculty. To accomplish this, about half of the faculty members have joint teaching/

research appointments with the IS program and LTI or DLO which allow them to keep current with field trends and to devote the time necessary to mentor students in these cognitive apprenticeship-type experiences. One graduate, now employed in business and industry, described her LTI assistantship as “phenomenal” and “a critical part of her education,” saying:

I learned more there than I did in any of my classes... It was real-life work with all the constraints, all the ambiguity; you were forced with the timeline. Because we were a research organization, we got to apply a lot of what we learned... we got to take the pure research and pull it forward to the applied area.

The success of the IS program in preparing students for careers in business and industry can be seen in the number of companies that come regularly to the campus to recruit interns and job applicants. Many of these employers return due to their satisfaction with employees who are LU graduates. The research experience that students gain through the assistantships may also explain the program's success in placing students in higher education positions.

#### Collaborative approach with opportunities for mentoring

The value of mentoring relationships was emphasized by faculty who indicated that they tried to model what they, themselves, had experienced at LU or at previous institutions. Doctoral students fulfill a required research apprenticeship, in which they are assigned to shadow and assist a faculty member in their research efforts. These apprenticeships provide faculty with the opportunity to share their thinking processes using a cognitive apprenticeship model (Brown, Collins, & Duguid, 1989; Ertmer & Stepich, 2003): “I consider them apprentices... and I hold their hands and get them through the whole process... scaffolding is a part of the whole process... by the end... they are just fine on their own... and... [don't need] my help.”

In addition to faculty mentoring students, LU has a tradition of senior faculty mentoring junior faculty, and course materials are freely shared between faculty. In addition, the instructors involved in the online degree programs collaborate on a regular basis: “we have a monthly meeting called the Pathfinders group where all our online instructors meet to share instructional strategies and try to identify issues and do problem-solving and troubleshooting... we're always reviewing the content and making modifications.” Beyond teaching collaboration, however, there appears to be little evidence of collaboration between faculty on research projects.

Maintenance of alumni relationships provides another way for faculty to mentor students through private consulting contracts and internships. The Spring Seminar Course features at least 10–15 alumni as guest speakers. Several faculty stressed the importance of maintaining these connections with alumni, describing the relationships as critical to providing authentic experiences and a stimulating atmosphere for faculty and students alike.

Additional collaborative relationships are developed through the annual spring LTI Symposium, which brings IST professionals from around the globe to LU to collaborate on research projects that have the potential to impact the field for years to come. Students with assistantships at LTI have the opportunity to work on some of those projects, benefiting from both the opportunity to network and the participation in a vital international community of practice. Faculty, too, benefit from the collaboration, scholarship, and research that is a natural outgrowth of such events, and ultimately their instruction is enhanced.

### **Findings: different opinions**

Faculty differed on the amount of program flexibility required to enable students to obtain the preparation they need to be successful, as well as on the amount of differentiated preparation necessary to prepare students for specific career environments. While some faculty pointed to the evidence of excellent placement figures and expressed confidence that the program provided plenty of flexibility to enable students to customize their program of study to individual career goals, others described the program (especially the masters program) as “lockstep” or less flexible. During the course of this case study, faculty were considering a revision to the amount of flexibility allowed both masters and doctoral students in selecting coursework.

Faculty did, however, agree on the distinctions between the preparation of masters and doctoral students, basing those distinctions on the type of career environment that students intended to enter following graduation. Faculty concurred that doctoral students, who typically entered an higher education environment, were in need of research skills, grant writing experience, and additional theoretical knowledge. Masters students, on the other hand, required more knowledge of business and management practices, human performance technology practices, and a solid design/development foundation, all of which are reflected in the masters program competencies.

### **Workplace cultural preparation**

While all of the IS program faculty interviewed concurred that workplace culture could negatively impact a novice instructional designer’s successful performance in the work world, they provided differing reasons and solutions for the phenomena. Faculty were asked to comment on six cultural aspects of career environments that were identified as challenges by respondents to the nation-wide survey of IDT practitioners (Larson, 2005). These cultural issues included:

1. The nature of internal workplace politics,
2. trade-offs between quality, timeliness, and cost in work assignments,
3. availability of project resources for work assignments,

4. the amount of freedom given to make decisions,
5. employer attitudes toward change, innovation, and risk, and
6. workload.

Faculty indicated that many of these cultural issues were valid topics that were either covered explicitly in the current LU IS curriculum, or tended to come up naturally as a result of the collaboration and group dynamics of project teams in both courses and supplemental learning experiences (see Table 4). Interestingly, respondents to the national survey who had attended LU indicated that they had been prepared for all six of the cultural aspects identified as “issues” by the majority of other respondents (Larson, 2005).

Some faculty suggested that many of the cultural issues were related to *values clarification* that students should attempt to clear up prior to making a decision between public and private sector work settings (Table 3, competency 36). They felt values clarification was essential due to the basic differences that exist between public and private sector career environments. A faculty member remarked that in the public sector, “there is more of a focus on supporting people’s development. And in the private sector there is the traditional focus on the bottom line, and you are working... to support the overall mission of the organization.”

Other faculty noted that this type of disequilibrium often cuts across sectors and there are some aspects of workplace culture that become issues for individuals due to the quality of their own interpersonal communications

**Table 4** Measures to address cultural aspects of career environments with supporting literature

Measures suggested or used to address cultural aspects	Supporting literature
<ul style="list-style-type: none"> <li>• Collaborative teamwork to develop interpersonal communication skills</li> <li>• Operating within the target community of practice, as in research cell groups</li> <li>• Internships, assistantships</li> <li>• Authentic project work involving client negotiation/interactions to develop interpersonal skills</li> <li>• Class debriefing sessions to discuss client relations, to promote reflection and to develop a shared mental model</li> <li>• Case studies</li> <li>• Relate examples to students’ prior knowledge and work experiences</li> <li>• Require students to complete course requirements under certain ‘true-to-life’ constraints</li> <li>• Provide instruction in project management and change management</li> <li>• Cognitive apprenticeship</li> <li>• Directly teach communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Julian, Kinzie, &amp; Larsen, 2000</li> <li>• Summers, Lohr, &amp; O’Neil, 2002; Lave &amp; Wenger, 1991; McLoughlin, 1999</li> <li>• Rowland, et al., 1994; Summers, et al., 2002</li> <li>• Rowland, et al., 1994; Thomas, et al., 2002</li> <li>• Thomas, et al., 2002</li> <li>• Ertmer &amp; Quinn, 2003; Summers, et al., 2002</li> <li>• Merrill, 2002</li> <li>• Summers, et al., 2002</li> <li>• Greer, 1992; Van Tiem, 2004</li> <li>• Brown, Collins, &amp; Duguid, 1989</li> <li>• Summers, et al., 2002</li> </ul>

skills. They maintained that, regardless of the sector or career environment, there are certain interpersonal skills that are needed by *all* IDT graduates (Table 3, competencies 27, 29–30, and 32–36). Recent studies of IDT faculty and professional practitioners confirm the importance of the development of this skill set (Fox & Klein, 2003; Klein & Fox, 2004; Summers, et al., 2002).

In commenting on how interpersonal skills could be incorporated into the IDT curriculum, a visiting faculty member noted that in the late 1950s, '60s and early 70s, the topic of communication was a vital part of the field:

I don't see much of that anymore. Communication is so pervasive in all of our work lives. It's relationships with other people, it's introducing new ideas, it's taking the current setting and coming up with alternative ways of doing it. It's learning how to listen to other people and not just talk. It's learning how to determine who in the group is likely to be an early adapter and who are the lagers in the group.

Many methods and strategies were suggested by the IS faculty for sensitizing students to the cultural challenges they could potentially face in the work world. Table 4 summarizes the measures suggested to sensitize students to cultural or contextual aspects of career environments, as well as references to the instructional design and situated learning literature featuring these methods and strategies. Positive comments from alumni indicate that this combination of a wide variety of strategies appears to have worked for IS graduates.

### **Integration with previous literature**

An analysis of the instructional design literature indicates that the largest variation in IDT practice and competency requirements occurs in the business and industry career environment, as illustrated in Table 1 (Berge, et al., 2002; Liang, 1999; Piskurich & Sanders, 1998; Reiser & Dempsey, 2002; Richey, et al., 2001). In addition, the literature also points out that there are definite differences in the cultural value systems between private (e.g., business and industry) and public sectors (Cabral-Cardoso, 2001; Tasker & Packham, 1993).

Since the 1980s, the literature has emphasized that IDT students not only need technical knowledge of the profession, but must also build practical competencies such as problem-solving, reflection and application of prior experiences that professionals employ in unique situations (Quinn, 1994; Winn, 1997). The need for change management skill is also reflected in the literature. For example, in a study of large Australian corporate firms, Dawe (2003) found that one of the elements fundamental to best practice training was responding to change both within and external to the organization.

The literature recommends that academic preparation programs for IDT include practice using ill-defined problems in authentic settings with reflection and expert modeling, using the same strategies as those employed at LU,

including case studies, authentic project work, internships and assistantships, action learning principles, and situations designed to facilitate cognitive apprenticeships (Bannan-Ritland, 2001; Cennamo & Holmes, 2001; Ertmer & Quinn, 2003; Kapp & Phillips, 2003; Quinn, 1994, 1995; Rossett, 1981; Rowland, et al., 1994; Thomas, et al., 2002; Tripp, 1994). Rowland, et al., (1994) further point out that internships and assistantships enable students to work on authentic, complex problems in real settings; to interact as a professional with managers, subject matter experts, and clients; to practice interpersonal skills; and to work under a mentor.

In an effort to investigate alternative perspectives for ID preparation and competency development, Rowland, et al., (1994) studied creative design fields such as architecture, graphic design, engineering and interior design. They recommended the use of preparation methods common to those design fields, including public presentations, authentic projects, case studies, and internships/apprenticeships, all of which are used in the LU program.

The cultural variations and interpersonal issues in different career environments represent some of the most difficult concepts to convey to students who will enter a work culture outside of academia. The topic of 'corporate' culture is prevalent in the literature; however, information on cultural aspects that job applicants should consider prior to accepting employment in business and industry and other environments is spread across a wide range of literature (Bartell, 2001; Cabral-Cardoso, 2001; Grimwald, 2001; Trimby, 1982; Tasker & Packham, 1993). Coping with cultural change requires skills in interpersonal communication and teamwork, which are widely emphasized in the literature as a critical requirement for IDT success (Liang, 1999; Surrey & Robinson, 2001). The school-to-work literature, which recommends internships and apprenticeships, underscores the need to prepare college students with the interpersonal and teamwork skills needed for transition to the world of work. These skills are among the top five reasons new college graduates pre-terminate their first jobs (Gardner, 2000 citing US Labor Department statistics): lack of initiative/motivation, failure to be at work on time/attendance, failure to following instructions, poor interpersonal skills, and lack of teamwork skills. LU faculty acknowledge the importance of issues related to organizational culture, and have implemented a series of authentic course and internship experiences to expose students to work environments prior to graduation.

By exploring and illustrating the practices of the LU IS program, this case study validates the literature that recommends preparation practices such as case studies, authentic project work, internships and assistantships, action learning principles, and situations designed to facilitate cognitive apprenticeships (Bannan-Ritland, 2001; Cennamo & Holmes, 2001; Ertmer & Quinn, 2003; Kapp & Phillips, 2003; Quinn, 1994, 1995; Rossett, 1981; Rowland, et al., 1994; Thomas, et al., 2002; Tripp, 1994). Furthermore, this case study fills a gap in the literature by providing an exploration of the preparation practices of a specific IDT program identified as exemplary by current practitioners. In addition, the identification of cultural issues from the *Instructional Design*

*Career Environments Survey*, coupled with the identification of the practices used at LU to address those cultural issues provides IDT programs with a model for ensuring that graduates have considered contextual differences in career environments and are better prepared to navigate the work world.

## Conclusions and recommendations

As one of the top exemplary IDT preparation programs identified through a national survey, LU was chosen to study how a successful IDT preparation program provides flexibility so that students can experience their choice of work context. The LU IS program advertises itself as a generalist program (2004 LU IS promotional flyer); however, faculty, student, and alumni interviews as well as faculty estimates on placement indicate that the majority of LU IS masters graduates enter the business and industry career environment. In addition, competencies for the LU masters program are geared to prepare graduates for successful practice in a corporate environment (see Table 3). The LU IS program was therefore judged an excellent case to study the phenomenon of IDT preparation for differing career environments.

Based on the results of the case study, it is evident that LU has incorporated a variety of approaches and practices to produce a program that continues to maintain a reputation for excellence. The preparation approaches of the LU IS faculty are deeply-rooted because they have grown from their own diverse experiences in a variety of career environments. Exemplary IDT programs such as this one illustrate that success can be achieved through continuous self-evaluation and improvement, and by providing flexibility for students to customize their preparation through contextualized experiences. Through such processes, academic programs can provide students with the type of education that will better prepare them for whatever work situation they enter.

The results of this study also show the potential value of alumni follow-up, employer canvassing, and practitioner surveys to identify the job demands of a corporate environment and to develop educational practices that align with those demands. By studying the successes and challenges of specific programs, new or existing programs may gain ideas for building or re-working their programs to better meet the needs of students desiring contextualized preparation for different career environments.

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